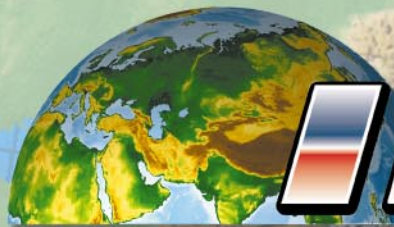




Program Strategy



IPP

Initiatives for Proliferation Prevention

United States Department of Energy

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by the Assistant Secretary, Office of Nonproliferation and National Security

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Foreword

Many assumed that the end of the Cold War meant an end to the threat from the Soviet Union's nuclear, chemical and biological weapons programs. It did not. In fact, the threat of diversion of knowledge, material, and technologies associated with the former Soviet Union's weapons of mass destruction programs increased. The Soviet Union produced a cadre of world-class scientists whose knowledge and experience are invaluable to countries seeking their own weapons of mass destruction programs. The fall of Communism and the subsequent break up of the Soviet Union left vulnerable the weapons scientists, technologies, and material built up during the Cold War. These scientists and technicians, former beneficiaries of wealth and prestige, are now left with little or no salaries and an uncertain mission. There is great concern that, in desperation, the weapons scientists would be lured by countries or organizations of proliferation concern to sell their technology and expertise. The current financial crisis affecting the former Soviet Union makes the problem even more urgent.

The Initiatives for Proliferation Prevention Program has been playing an important role in addressing these threats created by the legacy of the Cold War. By seeking to engage Russian, Kazakhstani, Belarussian, and Ukrainian former weapons of mass destruction specialists and institutes in peaceful, commercial projects, the Program has a dual focus of keeping the scientists gainfully employed and redirecting their focus to meaningful, sustainable non-military applications.

While several other U.S. Government initiatives are also aimed at preventing weapons of mass destruction proliferation, the Initiatives for Proliferation Prevention Program has a unique approach—it seeks to create a phased process to move beyond cooperative research and development to eventually form commercial partnerships between U.S. industry and the former Soviet facilities. The Initiatives for Proliferation Prevention Program is an excellent example of how the United States and the countries of the former Soviet Union are working together to promote mutual nonproliferation goals and to advance world security.



Rose Gottemoeller
*Assistant Secretary for
Nonproliferation and National Security*

“The threats we face today as Americans respect no nations’ borders. Think of them...the spread of weapons of mass destruction...If we fail to address these threats today, we will suffer the consequences of our tomorrow.”

– President Bill Clinton

1.0 Introduction

The United States (U.S.) efforts during the Cold War to defend against the threat from the Soviet Union's nuclear, chemical, and biological weapons of mass destruction were massive. Fortunately, the end of the Cold War reduced the danger of weapons of mass destruction exchange between the U.S. and the former Soviet Union (hereafter referred to as the Newly Independent States – NIS). Now, however, instabilities and uncertainties in the Newly Independent States, particularly the current financial crisis, pose a new challenge to national security and nonproliferation objectives.



"Russian biological research facility"

The salaries of most former Soviet weapons of mass destruction personnel plummeted more than 400 percent to "one third the official subsistence wage," from 1991 to 1997. The August 17, 1998, economic crisis in Russia further aggravated this situation. Under the weight of changing political, social, and economic conditions, the NIS struggles to deter weapons of mass destruction personnel from taking advantage of lucrative

opportunities to put their knowledge to dangerous use. The recent financial crisis and strain on resources also limits the ability to compensate adequately these scientists or to sustain the infrastructures that supported them and their families for at least 50 years. Salaries are being paid slowly or are not being paid at all, security is at risk, facilities have fallen into disrepair, and thus the proliferation potential increases.

The Initiatives for Proliferation Prevention Program, funded through the U.S. Department of Energy (DOE), is a cooperative program designed to address these challenges to U.S. national security and nonproliferation

objectives. Begun in 1994, the Initiatives for Proliferation Prevention Program's primary concern is to engage NIS institutes and personnel that: (1) have weapons of mass destruction expertise; and, (2) have commercial potential to use their expertise for peaceful purposes.

The early efforts of the Initiatives for Proliferation Prevention Program were designed to broadly engage institutes and weapons specialists to develop the relationships and confidence necessary to transition to peaceful endeavors, with less regard to the commercial viability of those initial projects. This emphasis was changed in late 1997 to "technology commercialization" versus "engagement" as the predominant program goal, though engagement still remained an important objective of the Program. As a result, the number of cost-shared projects involving U.S. industry participants (Thrust 2 projects) increased from 1997 to 1998 by almost 10 percent of the total program funding (51 to 61 percent). Over the life of the Program, U.S. industry has contributed over \$64 million to Thrust 2 project activities.

Over the past five years, institute-by-institute, scientist-by-scientist, the Initiatives for Proliferation Prevention Program has engaged over 6,200 former weapons of mass destruction scientists, thereby incrementally decreasing the potential for proliferation.

This Program Strategy highlights the elements critical to accomplishing the Initiatives for Proliferation Prevention Program's short-term goals and provides management and organizational, operational, financial, and outreach plans for achieving long-term objectives.

- The Mission section explains nonproliferation and commercialization objectives.
- The Management and Organization section maps the Program's operational structure.
- The Approach section specifies how the Initiatives for Proliferation Prevention Program carries out its mission.
- The Performance Metrics section describes how the Program evaluates its success and identifies areas for improvement.

- The Financial section summarizes financial goals and funding allocation.
- The Outreach section describes mechanisms by which the Program will interact with other nonproliferation agencies and inform the public.

More detailed information and specific direction regarding the role of each program element are provided in the General Program Guidance document, which is available upon request.

2.0 Mission

The Initiatives for Proliferation Prevention Program exists to enhance U.S. national security and nonproliferation objectives by fulfilling a unique role:

To provide meaningful, sustainable, non-weapons-related work for former Newly Independent States weapons of mass destruction scientists, through commercially viable market opportunities.

This approach is intended to produce commercial and economic benefits for both the Newly Independent States institutes and U.S. industry. This approach also familiarizes NIS scientists with western business practices such as proposal writing, cost estimate, project planning, and concept of payment at delivery. Other U.S. and international programs, including the Cooperative Threat Reduction Program, managed by the U.S. Department of Defense, and the Science Centers Program, under the U.S. Department of State, also address various aspects of proliferation of weapons of mass destruction. The Initiatives for Proliferation Prevention Program provides a unique approach as it seeks to create a path to markets and the U.S. industrial sector.

There are three phases of Initiatives for Proliferation Prevention Program projects: Thrust 1, Thrust 2, and Thrust 3. The Program first identifies and evaluates commercial potential of research and development at NIS institutes formerly engaged in weapons of mass destruction activities (Thrust 1 projects). In this stage, technology is verified and validated. The objective of Thrust 1 projects is to stabilize NIS institutes by engaging them with the Initiatives for Proliferation Prevention Program in scientific research and development for peaceful, non-weapons purposes.



"Prosthetic foot developed by SNL and Russian scientists"



"Ultra-accelerated natural sunlight exposure testing system developed by NREL and Russian scientists"

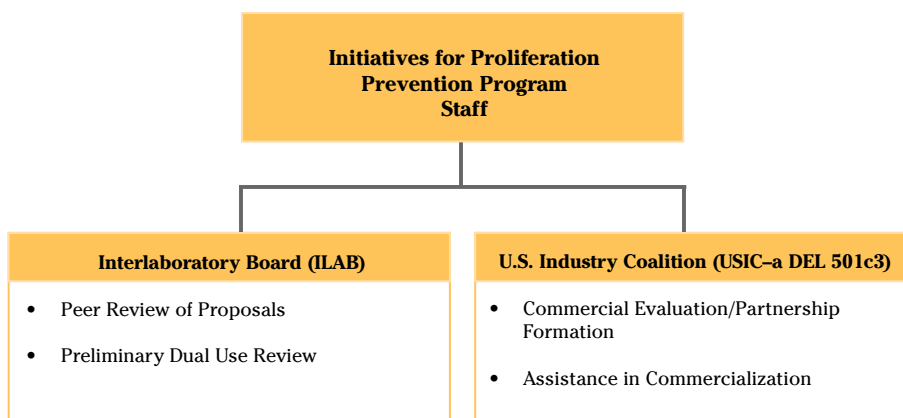
These projects may then move into the second phase. Once a technology has been verified and has been deemed commercially viable, the Program works to develop the technology into long-term, self-sustaining work by bringing U.S. industry into the process (Thrust 2). Although industry may be involved in Thrust 1 commercial evaluations, in the Thrust 2 phase, a U.S. company becomes a resource-sharing partner. Thrust 3 projects complete the commercialization process. During the Thrust 3 phase, the U.S. Government exits from the project and U.S. industry and the Newly Independent States institutes continue a commercial relationship. This three-step process is explained in greater detail in Section 4.0, “Approach.”



“ANL IPP scientists meet with their Russian counterparts in Sarov, Russia”

3.0 Management and Organization

The Initiatives for Proliferation Prevention Program Office at DOE Headquarters oversees, coordinates, and directs all activities of the Program participants. Two entities are used to pursue commercialization: an organization of U.S. national laboratories to initiate contacts with NIS institutes and to perform the capabilities evaluation and technology assessment; and, a U.S.-business based consortium to perform commercial evaluations and serve as a repository of business expertise. The capabilities evaluation and technology assessment is the responsibility of the Inter-Laboratory Board (ILAB), made up of members from ten of the DOE National Laboratories, plus the Kansas City Plant. ILAB assesses the capabilities and technical potential of the NIS institutes as well as the feasibility and nonproliferation value of the proposed projects. The United States Industry Coalition (USIC), comprised of participating U.S. companies, evaluates commercial potential of the proposed projects. USIC promotes those that have the potential to be cost effective to implement, that are attractive to investors, and would be commercially viable. Both the ILAB and USIC report to the Director of the Initiatives for Proliferation Prevention Program. It should be noted, however, that while each element of the Program has its own set of distinct duties and responsibilities, as described in the following sections, at times they may overlap when appropriate.



3.1 Initiatives for Proliferation Prevention Program Headquarters

The Program Office provides policy formulation and direction, management oversight, coordination, and performance analysis. The Headquarters staff, which includes the Director, the Program Operations Staff, and the Technical Coordination Staff, are responsible for ensuring that the Program meets policy goals and objectives in accordance with U.S. Government rules and regulations. Collectively, the elements of the Headquarters' staff actively participate in and monitor program activities, and establish performance metrics for measuring the program's success.

3.1.1 IPP Headquarters — Director

The IPP Program Director provides leadership and vision of the goals and objectives of the Program. The Director is responsible for maintaining oversight of the program elements, including the Headquarters Staff, Inter-laboratory Board, and United States Industry Coalition.

Specifically, the responsibilities of the Director include:

- Establish strategic direction for the Initiatives for Proliferation Prevention Program;
- Evaluate, monitor, and enforce Program-wide performance and leadership;
- Work to ensure full coordination among all Program elements;
- Maintain current Program procedures and guidelines;
- Establish and maintain Program funding priorities.

3.1.2 IPP Headquarters — Program Operations Staff

The Program Operations staff supports the Director in maintaining the focus of the Initiatives for Proliferation Prevention Program and by ensuring that each program element follows the strategic direction outlined in this Program Strategy.

In addition, the implementation of the Initiatives for Proliferation Prevention Program involves extensive interaction with its stakeholders, including other government agencies; officials in Russia, Kazakhstan, Ukraine, and Belarus; the DOE National Laboratories; and private industry. The Program Operation Staff maintains regular liaison with other agencies

of the U.S. Government, including the National Security Council, the Departments of State and Defense, and others as appropriate. This interaction is of particular importance to maintain a cohesive U.S. policy, which directs the various nonproliferation efforts. In this capacity, members of the Program Operations Staff:

- Conduct liaison and coordination activities with the Interagency policy community;
- Prepare outreach material to inform the public about the Program goals and objectives;
- Support the Director in relations with Government and industry officials in Russia, Kazakhstan, Ukraine, and Belarus, and with other NIS governments, as necessary;
- Assist in the conduct of relations with other countries;
- Respond to public inquiries on Initiatives for Proliferation Prevention Program activities, including providing information to representatives of industry and academia on project development, commercialization, and collaboration activities.

3.1.3 Initiatives for Proliferation Prevention Program Headquarters — Technical Coordination Staff

The Technical Coordination staff is comprised of advisory scientists. These scientists evaluate the technical merit and nonproliferation value of project proposals once the proposals have been through the ILAB review and are forwarded to Headquarters for final approval. They also serve as liaisons to the Department of State's Science Centers Programs, and other applicable agencies such as the Departments of Defense and Commerce. The main responsibilities of the Technical Coordination staff are to:

- Provide technical expertise to the IPP Program Director;
- Review, evaluate, and provide final recommendations on the technical merit, deliverables, and cost associated with new Program projects under consideration, subsequent to ILAB review;
- Work with the U.S. National Laboratories to ensure that proposals conform to Program criteria;

NIS Institutes Involved* with IPP

Russian Federation ■

All-Russian Scientific Research Institute of Nuclear Power Plant Operation
 All-Russian Electrical Engineering Institute (VEI)
 All-Russian Institute of Phytopathology
 All-Russian Institute of Scientific and Technical Information
 All-Russian Light Alloy Institute (VILS)
 All-Russian Scientific Research Institute of Theoretical Physics
 All-Russian Scientific Research Institute of Automatics
 All-Russian Scientific Research Institute of Chemical Technology
 All-Russian Scientific Research Institute of Experimental Physics
 All-Russian Scientific Research Institute of Technical Physics
 All-Union Association of Engineers for Heating, Ventilation, Air Conditioning, Heat Supply, and Building Thermal Physics (ABOK)
 Andreyev Acoustics Institute
 Association of Centers for Engineering and Automation
 A.A. Bochvar All-Russian Scientific Research Institute of Inorganic Materials – Siberia Branch (VNIINM-SB) – Minatom
 A.A. Bochvar All-Russian Scientific Research Institute of Inorganic Materials (VNIINM)
 A.F. Ioffe Physical - Technical Institute – RAS
 A.V. Shubnikov Institute of Crystallography
 Budker Institute of Nuclear Physics
 Center of Instrument Engineering for Geophysics and Ecology
 Central Institute of Aviation Motors
 Chelyabinsk Polytechnic Institute
 Chelyabinsk State University of Technology
 Chimprom
 D.V. Efremov Scientific Institute
 Electrical Physics Institute (EPI)
 ELTECH, St. Petersburg University
 Englehardt Institute of Molecular Biology
 ENTEK
 Experimental Plant for the Design and Manufacturing of Scientific Equipment - Russian Academy of Sciences (EZNP)
 Federal Center of Double Technologies “Soyuz”
 GAMALEYA Institute of Epidemiology & Microbiology
 General Physics Institute (GPI)
 GNPP Nedra
 Gosstroy Mesh Institute, Electromechanica
 High Energy Density Research Center
 INEOS Institute, Moscow
 Institute for Theoretical and Experimental Physics (ITEP)
 Institute of Electrophysics, Ural Division Academy of Science

Institute of Applied Physics
 Institute of Biochemistry and Physiology of Micro-Organisms
 Institute of Biophysics
 Institute of Chemical Kinetics and Combustion
 Institute of Chemical Means of Plant Protection
 Institute of Chemical Physics – RAS
 Institute of Electrophysics
 Institute of Energy Problems of Chemical Physics
 Institute of Experimental Meteorology
 Institute of General Physics
 Institute of Genetics and Selection of Industrial Organisms
 Institute of Geoelectromagnetic Research
 Institute of Geology of Ore Deposits, Petrography, Minerology, and Geochemistry
 Institute of High Current Electronics
 Institute of High Energy Physics
 Institute of Hygiene, Toxicology, and Occupational Pathology
 Institute of Immunological Engineering
 Institute of Introscopy
 Institute of Laser Spectroscopy
 Institute of Mechanics Ufa Branch of RAS
 Institute of Metal Physics – RAS
 Institute of Metallurgy
 Institute of Metals Superplasticity Problems
 Institute of Nuclear Research – RAS
 Institute of Nuclear Research INTEAR Ltd.
 Institute of Petroleum Chemistry
 Institute of Physical Chemistry – RAS
 Institute of Physics and Power Engineering
 Institute of Physics of Advanced Materials
 Institute of Power Engineering Problems
 Institute of Problems of Electrophysics
 Institute of Protein Research
 Institute of Solid State Physics
 Institute of Spectroscopy, Troitsk
 Institute of Theoretical and Experimental Physics
 Institute of Thermophysics – RAS
 INTERSOLARCENTER
 I.W. Frantzevich Institute for Problems of Material Science
 JIZAK, Fiolent
 Joint Institute for Nuclear Research (JINR)
 JSC Biochimmesh
 Karpov Institute of Chemical Physics
 Krasnoyarsk Politechnical Institute
 Krasnaya Zvezda – (Red Star) State Enterprise
 Krasnoyarsk Mining & Chemical Combine
 KVANT, Sovlux Laboratory for High Energy
 Landau Institute of Theoretical Physics
 Mechanical Engineering Research Institute, IMACH

Mining and Chemical Combine Krasnoyarsk-26
Ministry of Atomic Energy (Minatom)
Moscow Aviation Institute (MAI)
Moscow Engineering Physics Institute (MEPhI)
Moscow State University
Moscow Steel and Iron Institute
MUCATEX
NPO Astrophysics
Nuclear Safety Institute – RAS
N.D. Zelinsky Institute of Organic Chemistry
Production Enterprise Mayak
P.N. Lebedev Physical Institute – RAS
P.P. Shirshov Institute of Oceanology
Republican Engineering Technical Center
Research and Development Institute of Power Engineering
Research Center for Molecular Diagnostics and Therapy
Research Center for Toxicology and Hygiene Regulation of Biopreparations
Research Institute of Atomic Reactors
Russian Academy of Electrotechnical Sciences
Russian Materials Science Center, Tomsk
Russian Research Center – Kurchatov Institute
Science Center of Applied Problems in Electrodynamics
Semenov Institute of Chemical Physics
Shemyakin Institute of Bioorganic Chemistry
Siberian Chemical Combine (SKhK)
SKB “Geotekhnika”
Soliton Scientific and Research Center
State Committee for Uses of Nuclear Energy
State Research and Production Corporation
State Research Center for Applied Microbiology (Obolensk)
State Research Center for Virology and Biotechnology “Vector”
State Research Institute of Organic Chemistry and Technology
St. Petersburg Mining Institute
Thermodynamics Center
Tomsk Research Institute of Introscopy
Topchiev Institute of Petrochemical Synthesis (TIPS)
Troitsk Institute for Innovation and Fusion Research (Minatom)
TsAGI-Central AeroHydrodynamics Institute
Ufa State Aviation Technical University
Urals Mining and Geology Academy
Urals Polytechnic Institute
Vavilov State Optical Institute
Vernadsky Institute of Geochemistry and Analytical Chemistry
Volga Research and Development Institute
Volgograd Kirov Khimprom Production Association

V.N. Bakul Institute for Superhard Materials
V.G. Khlopin Radium Institute (Minatom)

Ukraine ■

Donbass Civil Engineering Institute
Glushkov Institute of Cybernetics
Ministry of Power of Ukraine
Institute for Single Crystals
Institute of Conversion Problems & Perspective Technologies
Institute of Energy Saving Problems
Institute of Geological Science – UAS
Institute of Materials Science
Institute of Metal Physics – UAS
Institute of Microbiology and Virology
Ukrainian Academy of Sciences
Institute of Physics and Power Engineering
Institute of Special Mechanical Problems
Institute of Thermal Physics
International Institute of Cell Biology
Kharkov Technical Physics Institute
Kyyiv Institute of Materials Science
National Academy of Sciences of Ukraine
Paton Welding Institute
State Committee of Ukraine on Food Industry
State Metallurgical Academic University
Thermodynamics Center
Ukrainian State Committee on Nuclear and Radiation Safety
V.I. Vernadskii Institute/YUNK-Bureau, LTD.
Zabolotny Institute of Microbiology and Virology

Kazakhstan ■

Institute of Geophysical Research
Kazak State University
Laboratory of Ion-Exchange Resin
Institute of Chemical Sciences
National Center on Biotechnology (NCB)
National Nuclear Center of Kazakhstan
Physical-Technical Institute of Ministry of Science – KAS
“Baykal-1” Research Reactor Complex
Institute of Atomic Energy of the Republic of Kazakhstan
National Nuclear Center

Belarus ■

Institute of Power Engineering Problems
Institute of Radio Ecological Problems (IREP)
Physical-Technical Institute – BAS

- Review and provide recommendations to the Director on science and technology issues involving Program activities in the interagency community;
- Serve as liaison to the other U.S. Government nonproliferation programs.

3.2 The Inter-Laboratory Board

The ILAB, made up of one representative from ten of the U.S. National Laboratories, and the Kansas City Plant, facilitates project development. The involvement of the U.S. National Laboratories is critical to the program. The “scientist-to-scientist” approach employed by the Initiatives for Proliferation Prevention Program has been instrumental to gaining access to the former Soviet weapons laboratories and establishing working relationships with the scientists.

The crucial involvement of the DOE National Laboratories includes monitoring each contract with the NIS, collaborating and having technical input in dealing with NIS scientists and engineers, as well as with U.S. industry partners.

The ILAB has primary responsibility for the capability evaluation effort, and the initial project reviews to determine technical and nonproliferation merit. The ILAB also works closely with USIC to identify and screen NIS weapons of mass destruction technology with civilian commercialization potential, and recommend commercial partners. ILAB recommends new projects to the Program Director for review and approval.

In short, the ILAB is responsible for:

- Promoting IPP activities at the U.S. National Laboratories and recruiting Principal Investigators;
- Providing peer review of draft proposals;
- Assisting the Principal Investigators in preparing proposals that reflect the operational goals of the Program, finding suitable partners in the NIS, making contact with NIS WMD scientists, and negotiating contracts;
- Providing technical oversight of projects at the laboratory;

- Providing timely reports to IPP Headquarters, which include the identification of problem areas, major accomplishments, project milestones, commercialization activities, financial information, and program performance;
- Developing strategies and activities to achieve the commercialization objectives of individual IPP projects;
- Providing input to the Director on policy and technical matters, such as taxation, banking, and contracts.

3.3 United States Industry Coalition

The Initiatives for Proliferation Prevention Program's commercialization efforts are supported by the United States Industry Coalition. USIC is a member organization composed of U.S. companies and universities. Its goal is to facilitate commercial opportunities in the NIS institutes using its business experience and the established relationships of many of its members with the NIS institutes. USIC provides management and financial support to the NIS institutes to include business incubators, research parks, consulting partnerships, and venture capital funding.

USIC is responsible for:

- Providing industry input to the ILAB concerning technology interests;
- Promoting U.S. industrial participation in the Initiatives for Proliferation Prevention Program;
- Maintaining a repository on NIS business practices and methods;
- Ensuring fairness of opportunity marketing projects to U.S. industry;
- Facilitating the development of Thrust 2 and Thrust 3 projects;
- Independently evaluating the commercial viability of proposed project activities;
- Matching technological developments with potential commercial development sources;
- Providing timely reports and the results of commercial evaluations to DOE and to the Inter-Laboratory Board;
- Advising the Director on industry perspectives.

USIC markets commercialization successes and opportunities to industrial and financial markets, distributes NIS institute and scientist capability

summaries to industry as a whole, and creates relationships with recognized industry and financial leaders. This effort helps to build outside interest and support for the Initiatives for Proliferation Prevention Program.

Participating National Laboratories

- Argonne National Laboratory
- Brookhaven National Laboratory
- Idaho National Engineering and Environmental Laboratory
- Lawrence Berkeley National Laboratory
- Lawrence Livermore National Laboratory
- Los Alamos National Laboratory
- National Renewable Energy Laboratory
- Oak Ridge National Laboratory
- Pacific Northwest National Laboratory
- Sandia National Laboratories
- Kansas City Plant

4.0 Approach

This section briefly describes the Initiatives for Proliferation Prevention Program’s three phase approach: (1) Newly Independent States technology validation and partnering of the U.S. National Laboratories and the NIS institutes (Thrust 1); (2) introduction of a commercial partner (Thrust 2); and (3) full integration of industry and exit of the U.S. government (Thrust 3). The Initiatives for Proliferation Prevention Program’s strategy focuses on enhancing and harnessing the core capabilities of the NIS institutes for peaceful, commercial, civilian purposes.



The capabilities evaluation is performed through a “laboratory-to-institute” approach to: (1) evaluate the level of expertise of the various NIS scientists and engineers in light of the needs and areas of specific concern to the United States; and, (2) to evaluate the potential areas of collaboration. The National Laboratories engage the NIS institutes that have weapons of mass destruction expertise in developing project proposals that will advance U.S. nonproliferation goals. Once an institute is engaged, specific project proposals are jointly developed. These project proposals may be in response to a particular U.S. industry need or through the identification of a unique capability that resides in the NIS institutes which would benefit U.S. industry. It is a requirement, however, that every project must have a nonproliferation benefit.

Project proposals go through a rigorous review both within and outside of the Department of Energy. Proposals are reviewed by:

- The ILAB for technical, dual-use, and nonproliferation merit;
- The DOE Program Offices to ensure that the project meets DOE policy;
- The Departments of State, Defense, and other appropriate agencies to ensure that the projects are consistent with U.S. policy, that similar projects are not already being performed by their nonproliferation programs, that U.S. national security would not be endangered, and that the project does not further NIS weapons capabilities;

- USIC for commercialization potential;
- The Initiatives for Proliferation Prevention Program Technical Coordination Staff which serves as a final review.

Over the past 18 months, the Initiatives for Proliferation Prevention Program has intensified its review of individual projects to make sure that they are not “dual-use,” in other words, do not contribute to NIS military capabilities. This review draws on all the resources of the ILAB, and the U.S. Government interagency community. The Department of Energy and the Initiatives for Proliferation Prevention Program are committed to ensuring that its work does not compromise or endanger U.S. national security.

While the capabilities evaluation phase initiates the transition of Newly Independent States institutes to non-military endeavors, the Initiatives for Proliferation Prevention Program’s continued long-term success hinges on its ability to commercialize. The commercialization process begins by screening the Newly Independent States institutes identified as proliferation threats. An assessment is made of the NIS institutes’ technical and management deficiencies relative to the market, for example, the need for analytical equipment, packaging capability, or information management capabilities. Management deficiencies might be the need for business management training, accounting support, marketing and market analysis, and corporate strategic planning. U.S. industry, typically one company, becomes a partner at this point and invests private funds in the project. A variety of tools, such as business incubators, research parks, consulting partnerships, venture capital funding, or a combination of these, can be used to facilitate enterprise development within each Newly Independent States institute. Viable projects with commercial potential become Thrust 2 projects and begin the commercialization process. However, ongoing Thrust 1 projects that are slow in developing or are not producing as anticipated are reviewed and either re-focused or terminated, as appropriate.

The ultimate goal is for a project to progress to the Thrust 3 phase, when it becomes a self-sustaining commercial activity. At this point, the U.S. Government withdraws from the project as a funding source, and the U.S. industry partner and the Newly Independent States institute continue a business relationship.



“Study by LANL and Russian scientists of nanosize metals for commercial applications”



“LLNL automotive wheels developed with Russian technology”

5.0 Performance Metrics

The Initiatives for Proliferation Prevention Program uses specific metrics to evaluate the success of the program. The program's success will ultimately be measured by its ability to move Newly Independent States institutes from capabilities evaluation, technology development, technology validation, and development to commercialization. This is a long-term process, so success is also measured in the near-term nonproliferation objectives. Reporting and performance metrics will be documented and maintained in the Program's project database.

5.1 Program and Nonproliferation Metrics

Quarterly and annual progress reports will be used to describe new developments, summarize results, and map out future goals. By collecting this data on a regular basis, a reliable method for assembling and sharing program data will be obtained. Funding allocation will take into account the following performance metrics:

- Percentage of project funding to the NIS versus funding to the participating laboratory;
- Funds encumbered to date;
- Deliverables provided, within budget;
- Expenditures incurred within schedule and budget;
- Number of NIS institutes engaged in the Initiatives for Proliferation Prevention Program;
- Number of weapons scientists, engineers, and technicians engaged;
- Number of job opportunities created in the NIS and the United States.

5.2 Commercialization Metrics

Commercialization metrics highlight accomplishments and determine if any part of the commercialization process is lagging behind its goals. These reporting requirements aim to regularly capture information to assess progress and keep program participants informed. Funding allocation will take into account the following performance metrics:

- Number of entities engaged in commercialization process (Thrust 3);
- Private Sector Funding for Thrust 2 and 3 projects;

- Number of Cooperative Research and Development Agreements (CRADAs) signed;
- Number of license and patent applications;
- Number of commercial partnerships created in the NIS and the United States.

6.0 Financial

Financial policy and metrics include key financial assumptions, funding sources, how program finances will be handled, and the type of financial support to the NIS institutes. Financial policy objectives are as follows:

- IPP will emphasize expenditures of available funds on Thrust 2 projects.
- The Program will leverage at least \$1 of private support per every \$1 in Federal funds for Thrust 2 projects.
- At least 65 percent of project funds should go to NIS entities.

To align funding resources with its mission, the Program will use the following strategy:

- Commit about 70 percent of funds to nuclear weapons and 30 percent to biological and chemical weapons projects;
- Facilitate financial assistance, loans, grants, and technical and management assistance to support commercialization and Newly Independent States enterprise development;
- Continue to seek relief from NIS taxes. (Tax exemption for IPP Projects in Kazakhstan and Ukraine is currently being negotiated. Tax exemption in Russia falls under the umbrella of the 1992 U.S.-Russian Agreement to Facilitate the Provision of Assistance and the pending Russian legislation on U.S. Assistance.)

7.0 Outreach

The Initiatives for Proliferation Prevention Program recognizes that it is necessary and important to interact with its stakeholders—in particular, the U.S. Congress, the U.S. taxpayers, the Governments of the NIS, the NIS institutes, Government-funded nonproliferation organizations, U.S. industry, and the public at large.

The Initiatives for Proliferation Prevention Program reaches out for several important purposes. The Program addresses its core customers by disseminating program information. This allows the Program to solidify existing support. The Program also actively targets new information resources and organizations. Finally, the Program educates the general public on its purpose and successes.

By maintaining communication with all existing and potential customers and exploring new avenues of information disbursement, outreach will greatly strengthen the Initiatives for Proliferation Prevention Program. The following sections describe the methods for interacting with the stakeholders.

7.1 U.S. Congress

The U.S. Congress appropriates funding and establishes distribution. In return, Congress and taxpayers require reporting on the successes of the program in relation to funding spent. The Initiatives for Proliferation Prevention Program maintains communication, both written and oral, with Congressional staff members to inform them of progress, identify problems or shortfalls, and discuss the future of the Program.

7.2 Newly Independent States Institutes

The Initiatives for Proliferation Prevention Program will strengthen its current cooperation and will engage new NIS institutes in order to identify additional weapons of mass destruction technology with commercial

viability potential and employ former weapons of mass destruction scientists. Frequent travel to the institutes has been an effective means to build relationships between the Program and the institutes, as has been the use of e-mail and other electronic communication methods.

7.3 Government Funded Nonproliferation Agencies and Programs

Many agencies and organizations have nonproliferation or business objectives in the NIS. The Initiatives for Proliferation Prevention Program recognizes that expertise in numerous project areas resides in several other agencies of the U.S. Government. The Program will work to ensure that these entities are fully aware of its mission. When appropriate, the Program will seek to engage participation by or solicit information from other government-funded agencies with nonproliferation expertise and programs. Examples include the following U.S. Government or affiliated agencies:

- Office of the Vice President;
- Office of Science and Technology Policy;
- Office of Management and Budget;
- National Security Council;
- U.S. Department of Defense;
- U.S. Department of State and the component services;
- U.S. Department of Commerce;
- U.S. Agency for International Development;



"IPP jointly-sponsored biotechnology workshop in Novosibirsk, Russia"

- Overseas Private Investment Corporation;
- Centers for Disease Control;
- National Institutes of Health;
- U.S. Environmental Protection Agency; and
- U.S. Trade and Development Agency.

7.4 U.S. Industry

To increase U.S. industry funding and business support, the Initiatives for Proliferation Prevention Program has a focus on increasing USIC membership and expanding the participation of the current members of the Program. An outreach plan promoting the advantages of being a USIC member, such as the “right to first refusal” for commercialization projects, is underway.

Other institutions that can offer support to the Program, including business organizations, universities, and nonprofit organizations working on issues related to nonproliferation and commercialization of weapons of mass destruction capabilities, are encouraged to participate in the program.

7.6 Public

The public is informed through interviews, newspaper articles, editorials, and other mass media outlets. The outreach plan promotes awareness of nuclear, biological and chemical proliferation and how the Initiatives for Proliferation Prevention Program is responding to their issues.



“IPP Director William J. Desmond”

8.0 Conclusion

The end of the Cold War drastically impacted the funding of weapons of mass destruction scientists and the condition and security of the Newly Independent States institutes and made them vulnerable. The Initiatives for Proliferation Prevention Program strives to reduce the economic incentives for former weapons of mass destruction scientists in the Newly Independent States from engaging with or selling expertise and technology to countries of proliferation concern, thereby enhancing U.S. national security and nonproliferation objectives. The methods used are a unique strategy of evaluating NIS institutes with weapons of mass destruction-related expertise and then commercializing that expertise into peaceful, civilian channels. Through the leadership of its core members—the Initiatives for Proliferation Prevention Program Office, the USIC, and the ILAB—as well as with the support of other U.S. Government agencies, the Initiatives for Proliferation Prevention Program executes its strategy of nonproliferation and commercialization.

The future focus of the Initiatives for Proliferation Prevention Program is to carry out current engagement with the Newly Independent States institutes of proliferation concern, to expand to additional facilities, and to strengthen its cooperation with other agencies, nonproliferation organizations, and U.S. industry. The Initiatives for Proliferation Prevention Program is committed to advancing the security of the United States, achieving nonproliferation goals, and producing economic benefits in both the Newly Independent States and the United States.

Initiatives for Proliferation Prevention

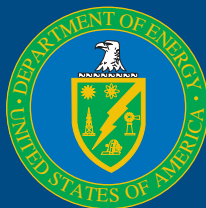
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